

Okay to
Enter.
3/31/06
Cgs

IN THE CLAIMS

1. (Previously Amended) A method for providing quality of service (QoS)-driven channel access within a basic service set (BSS) in a wireless network, the method comprising:

a) in a contention-free period (CFP) of a superframe that also includes a contention period (CP), sending a contention control (CC) frame from a point coordinator (PC) station of the BSS, the CC frame containing:

a1) information relating to a number of available centralized contention opportunities (CCOs) for receiving a reservation request (RR) non-data frame in a centralized contention interval (CCI) following the CC frame, and

a2) information identifying stations from which a RR was successfully received by the PC station in a preceding CCI;

b) receiving the CC frame at a non-PC station in the BSS;

c) sending an RR non-data frame in a selected one of the available CCOs in the CCI in response to the received CC frame, the RR non-data frame being sent from the non-PC station when the non-PC station has a burst of data frames to send, and the RR non-data frame indicating an amount of bandwidth requested by the non-PC station sending the RR non-data frame for transmitting the burst of data frames;

d) receiving the RR non-data frame at the PC-station in one of the CCOs of the CCI;

e) sending a multipoll frame from the PC station containing information relating to at least two transmission opportunities (TOs) assigned to at least one non-PC station in the BSS for data transmission;

f) receiving the multipoll frame at at least one non-PC station in the BSS; and

g) sending at least one data frame in respective TOs from each non-PC station that is identified in the multipoll frame in response to the received multipoll frame.

2. (Original) The method according to claim 1, wherein the at least one data frame sent by a non-PC station in response to a TO originates from one of a continuous/periodic flow type of traffic source, a discontinuous/bursty flow type of traffic source, and a best-effort/asynchronous traffic source,

the method further comprising a step of periodically allocating at least one TO for each non-PC station having a continuous/periodic flow type of traffic source based on at least one QoS parameter value maintained within the PC station.

3. (Original) The method according to claim 1, wherein the burst of data frames for which a RR is sent by a non-PC station originates from one of a discontinuous/bursty flow type of traffic source and a best-effort/asynchronous traffic source;

the method further comprising steps of:

allocating at least one TO for each non-PC station having a discontinuous/bursty flow type of traffic source based on at least one QoS parameter value maintained within the PC station upon an indication by the non-PC station, via a RR, of a new bursty arrival originating from a discontinuous/bursty flow type of traffic source at the non-PC station, and

allocating at least one TO for each non-PC station having a best-effort/asynchronous traffic source on a best-effort basis upon an indication by the non-PC station, via a RR, of a new bursty arrival originating from a best-effort/asynchronous traffic source at the non-PC station.

4. (Original) The method according to claim 1, wherein the information contained in the multipoll frame further includes information relating to a length of each TO.

5. (Original) The method according to claim 1, further comprising a step of scheduling transmission of down-stream traffic from the PC station and to at least one selected non-PC station in the BSS.

6. (Original) The method according to claim 1, wherein the wireless network is a wireless local area network (WLAN).

7. **(Currently Amended)** A system for providing quality of service (QoS)-driven channel access within a basic service set (BSS) in a wireless network, the system comprising:

a) a point coordinator (PC) station within the BSS sending a contention control (CC) frame in a contention-free period (CFP) of a superframe that also includes a contention period (CP), the CC frame containing:

a1) information relating to a number of available centralized contention opportunities (CCOs) for receiving a reservation request (RR) non-data frame in a centralized contention interval (CCI) following the CC frame, and

a2) information identifying stations from which an RR non-data frame was successfully received by the PC station in a preceding CCI, and

b) at least one non-PC station in the BSS, receiving the CC frame and sending an RR non-data frame in a selected one of the available CCOs in the CCI in response to the received CC frame, each RR non-data frame being sent when the corresponding non-PC station has a burst of data frames to send, each RR non-data frame indicating an amount of bandwidth requested by the non-PC station sending the RR non-data frame for transmitting the burst of data frames,

wherein the PC station receives the RR frame at the PC-station in one of the CCOs of the CCI, and

wherein the PC station sends a multipoll frame containing information relating to at least ~~two~~ two transmission opportunities (TOs) assigned to at least one non-PC station in the BSS for data transmission.

8. (Canceled)

9. **(Previously Amended)** The system according to claim 7, wherein at least one non-PC station in the BSS identified in the multipoll frame receives the multipoll frame, and sends at least one data frame in at least one of the TOs that are identified in the multipoll frame.

10. (Original) The system according to claim 9, wherein the at least one data frame sent by a non-PC station in response to a TO originates from one of a continuous/periodic flow type of traffic source, a discontinuous/bursty flow type of traffic source, and a best-effort/asynchronous traffic source,

wherein the PC station periodically allocates at least one TO for each non-PC station having a continuous/periodic flow type of traffic source based on at least one QoS parameter value maintained within the PC station.

11. (Original) The system according to claim 7, wherein the burst of data frames for which an RR is sent by a non-PC station originates from one of a discontinuous/bursty flow type of traffic source and a best-effort/asynchronous traffic source;

wherein the PC station allocates at least one TO for each non-PC station having a discontinuous/bursty flow type of traffic source based on at least one QoS parameter value maintained within the PC station upon an indication by the non-PC station, via an RR, of a new bursty arrival originating from a discontinuous/bursty flow type of traffic source at the non-PC station, and wherein the PC station allocates at least one TO for each non-PC station having a best-effort/asynchronous traffic source on a best-effort basis upon an indication by the non-PC station, via an RR, of a new bursty arrival originating from a best-effort/asynchronous traffic source at the non-PC station.

12. (Original) The system according to claim 9, wherein the information contained in the multipoll frame further includes information relating to a length of each TO.

13. (Original) The system according to claim 7, wherein the PC station schedules transmission of down-stream traffic from the PC station and to at least one selected non-PC station in the BSS.

14. (Original) The system according to claim 7, wherein the wireless network is a wireless local area network (WLAN).

15. **(Currently Amended)** A method for providing quality of service (QoS)-driven channel access within a basic service set (BSS) in a wireless network, the method comprising:

a) in a contention-free period (CFP) of a superframe that also includes a contention period (CP), sending a contention control (CC) frame from a point coordinator (PC) station of the BSS, the CC frame containing:

a1) information relating to a number of available centralized contention opportunities (CCOs) for receiving a reservation request (RR) non-data frame in a centralized contention interval (CCI) following the CC frame, and

a2) information identifying stations from which an RR was successfully received by the PC station in a preceding CCI, and

b) receiving an RR non-data frame at the PC station in one of the CCOs of the CCI, the RR non-data frame being sent in a selected one of the available CCOs in the CCI in response to the received CC frame, the RR non-data frame being sent from the non-PC station when the non-PC station has a burst of data frames to send, and the RR non-data frame indicating an amount of bandwidth requested by the non-PC station sending the RR non-data frame for transmitting the burst of data frames; and

c) sending a multipoll frame from the PC station containing information relating to at least two transmission opportunities (TOs) assigned to at least one non-PC station in the BSS for data transmission.

16. (Canceled)

17. **(Previously Amended)** The method according to claim 15, wherein the information contained in the multipoll frame further includes information relating to a length of each TO.

18. **(Original)** The method according to claim 15, wherein the burst of data frames for which an RR is sent by a non-PC station originates from one of a discontinuous/bursty flow type of traffic source and a best-effort/asynchronous traffic source,

the method further comprising steps of:

periodically allocating at least one TO for each non-PC station having one of a continuous/periodic flow type of traffic source and a discontinuous/bursty flow type of traffic source based on at least one QoS parameter value maintained within the PC station,

allocating at least one TO for each non-PC station having a discontinuous/bursty flow type of traffic source based on at least one QoS parameter value maintained within the PC station upon an indication by the non-PC station, via an RR, of a new bursty arrival originating from a discontinuous/bursty flow type of traffic source at the non-PC station, and

allocating at least one TO for each non-PC station having a best-effort/asynchronous traffic source on a best-effort basis upon an indication by the non-PC station, via an RR, of a new bursty arrival originating from a best-effort/asynchronous traffic source at the non-PC station.

19. (Original) The method according to claim 15, further comprising a step of scheduling transmission of down-stream traffic from the PC station and to at least one selected non-PC station in the BSS.

20. (Original) The method according to claim 15, wherein the wireless network is a wireless local area network (WLAN).

21. (Currently Amended) A method for providing quality of service (QoS)-driven channel access within a basic service set (BSS) in a wireless network, the method comprising:

a) receiving a contention control (CC) frame at a non-PC station in the BSS, the CC frame being sent from a point coordinator (PC) station of the BSS in a contention-free period (CFP) of a superframe that also includes a contention period (CP), the CC frame containing:

a1) information relating to a number of available centralized contention opportunities (CCOs) for receiving a reservation request (RR) non-data frame in a centralized contention interval (CCI) following the CC frame, and

a2) information identifying stations from which an RR non-data frame was successfully received by the PC station in a preceding CCI, the CC frame being sent by the PC station during a contention-free period (CFP) of a superframe, and

b) sending an RR non-data frame in a selected one of the available CCOs in the CCI in response to the received CC frame, the RR non-data frame being sent from the non-PC station when the non-PC station has a burst of data frames to send, the RR non-data frame indicating an amount of bandwidth requested by the non-PC station sending the RR non-data frame for transmitting the burst of data frames; and

c) receiving a multipoll frame at at least one non-PC station in the BSS, the multipoll frame being sent from the PC station and containing information relating to at least two transmission opportunities (TOs) assigned to at least one non-PC station in the BSS for data transmission; and

d) sending at least one data frame in respective TOs from each non-PC station that is identified in the multipoll frame in response to the received multipoll frame.

22. (Canceled)

23. (Previously Amended) The method according to claim 21, wherein the at least one data frame sent by a non-PC station originates from one of a continuous/periodic flow type of traffic source, a discontinuous/bursty flow type of traffic source, and a best-effort/asynchronous traffic source.

24. (Original) The method according to claim 21, wherein the burst of data frames for which an RR is sent by a non-PC station originates from one of a discontinuous/bursty flow type of traffic source and a best-effort/asynchronous traffic source.

25. (Original) The method according to claim 21, wherein the wireless network is a wireless local area network (WLAN).